12   OUTCOMES AND MODIFIABLE RESUSCITATIVE CHARACTERISTICS AMONGST PAN-ASIAN OUT-OF-HOSPITAL CARDIAC ARREST OCCURING AT NIGHT – A MULTINATIONAL, PROSEPCTIVE, OBSERVATIONEL STUDY

M Ong*, [1]AFW Ho, [2]Y Hao, [3]PP Pek, [3]N Shahidah, [3]S Yap, [4]YY Ng, [5]DW Kwanhatha, [6]EJ Lee, [7]P Khruekarnchana, [8]W Wah, [9,10]N Liu, [11]H Tanaka, [12]SD Shin, [13]MH Ma, [3,14]MEH Ong . [1]SingHealth Emergency Medicine Residency Programme, Singapore Health Services, Singapore; [2]Division of Medicine, Singapore General Hospital, Singapore; [3]Department of Emergency Medicine, Singapore General Hospital, Singapore; [4]Medical Department, Singapore Civil Defence Force, Singapore; [5]Emergency Department, Hospital Pulau Pinang, Georgetown, Pulau Pinang, Malaysia; [6]Department of Emergency Medicine, Seoul National University Hospital, Seoul, Korea; [7]Department of Emergency Medicine, Rajavithi Hospital, Bangkok, Thailand; [8]Saw Swee Hock School of Public Health, National University of Singapore, Singapore; [9]Health Services Research Centre, Singapore Health Services, Singapore; [10]Centre for Quantitative Medicine, Duke-NUS Medical School, Singapore; [11]Department of Emergency System, Graduate School of Sport System, Kokushikan University, Tokyo, Japan; [12]Department of Emergency Medicine, Seoul National University Hospital, Seoul, Korea; [13]Department of Emergency Medicine, National Taiwan University, Taipei, Taiwan; [14]Health Services and Systems Research, Duke-NUS Medical School, Singapore

10.1136/bmjopen-2017-EMSabstracts.12

Aim Studies are divided on the effect of day-night temporal differences on clinical outcomes in out-of-hospital cardiac arrest (OHCA). This study aimed to elucidate the circadian variation in OHCA

Methods This was a prospective, observational study of OHCA cases across multinational Pan-Asian sites. We excluded traumatic cases, less than 18 year-old, cases where resuscitation was not attempted or started but terminated before arrival at Emergency Department, and missing time-of-call-received data. Cases were divided according to time call received by dispatch centres into day (0700 H-1900H) and night (1900 H-0659H). Primary outcome was 30 day survival. Secondary outcomes were prehospital and hospital modifiable resuscitative characteristics.

Results 55881 cases qualified for analysis. 40.3% occurred at night. Incidence was lower at night (p<0.001), with a trough at 0300 hour. There was a large increase from 0700 H-0900H. After adjusting for potential confounders, odds of 30 day survival at night was lower with an adjusted odds ratio of 0.79 (95% Confidence Interval, 0.73–0.86, p<0.001). Overall, night cases have lower 30 day survival with a trough at midnight. However this diminished when considering only unwitnessed cases. On univariate logistic regression, occurrence at night was associated with decreased provision of bystander CPR, bystander AED application and prehospital adrenaline.

Conclusion In this international cohort, 30 day survival was worse in OHCA occurring at night. There were circadian patterns in incidence. Circadian patterns in 30 day survival diminished when considering only unwitnessed cases. Bystander CPR and bystander AED application were significantly lower at night. This would at least partially explain the decreased survival at night.

13   ANNUAL TOURNIQUET USE IN UK AMBULANCE SERVICES FOR MAJOR HAEMORRHAGE CONTROL

G Bessant*, S Dharmaratne. The Mid Yorkshire Hospitals NHS Trust

10.1136/bmjopen-2017-EMSabstracts.13

Aim The past decade has seen increasing civilian tourniquet use driven largely by a military evidence base1. This work intended to correlate available data on the frequency of UK prehospital tourniquet use.

Methods Freedom of information requests were made to 13 UK ambulance trusts for numbers of the incidence of tourniquet use from 2015–16 and patient haemodynamic status (blood pressure and pulse) at time of application.

Results Most (9/13) trusts were unable to provide data regarding prehospital haemorrhage control techniques as this something that was not routinely recorded. Two trusts had only recently begun recording tourniquet use and so were unable to provide 12 months of data and another was able to deliver number of recorded uses but not patient haemodynamic status. A single trust was able to provide full details of annual tourniquet use in 31 patients. 14/31 (45%) of patients had a systolic BP of <100 mmHg and a further 6/31 (19%) had a pulse >100/min at application. 2 patients had a haemostatic pressure dressing applied before tourniquet use.

Conclusion There is a significant lack of data regarding UK ambulance service tourniquet use and this should be urgently increased to improve both research and clinical governance. Many (45%) patients are already in significant levels of shock prior to application of tourniquet use which is associated with very high levels of mortality2 and only further data collection will help to understand and ultimately address the reasons underlying this.

REFERENCES
1. Bulger EM, Snyder D, & Schoelles K, et al. An evidence-based prehospital guideline for external haemorrhage control: American College of Surgeons Committee on Trauma. Prehosp Emerg Care. 2014;**18**(2):163–173.
2. Kragh JF, Littrel ML, & Jones JA, et al. Battle casualty survival with emergency tourniquet use to stop limb bleeding. J Emerg Med. 2011;**41**(6):590–597.

14   INITIAL PREHOSPITAL VITAL SIGNS TO PREDICT SUBSEQUENT ADVERSE HOSPITAL OUTCOMES

[1,2,3,7]TA Williams*, [7,8]KM Ho, [1,3]H Tohira, [6]DM Fatovich, [1,2]P Bailey, [1,2]D Brink, [9]P Gowens, [5]GD Perkins, [1,2,3,4]J Finn. [1]Prehospital Resuscitation and Emergency Care Research Unit, Curtin University; [2]St John Ambulance Western Australia; [3]Emergency Medicine, The University of Western Australia; [4]School of Public Health and Preventive Medicine, Monash University; [5]Warwick Medical School, University of Warwick; Heart of England NHS Foundation Trust; [6]Emergency Medicine Royal Perth Hospital; and the Centre for Clinical Research in Emergency Medicine, Harry Perkins Institute of Medical Research; [7]Intensive Care Unit, Royal Perth Hospital; [8]School of Population Health, The University of Western Australia; [9]Lead Consultant Paramedic, Clinical Directorate Scottish Ambulance Service

10.1136/bmjopen-2017-EMSabstracts.14

Aim There is growing interest to improve identification of the critically ill patient in the prehospital setting.[1–3] We aimed to assess whether initial vital physiological signs in the prehospital setting can predict subsequent adverse hospital outcomes, defined as intensive care (ICU) admission or death in the emergency department (ED).

Methods The initial prehospital physiological data of all adult patients, transported by the St John Ambulance Service to the metropolitan public EDs were linked to the ED information system in this retrospective cohort study. Cardiac arrest unwitnessed by paramedics, rural, inter-hospital, non-emergency, and